Remarks and Arguments

1. Applicant believes that the rejection of Claims 1 – 4, 6, 8 – 15, 17, 19 – 24, 26 and 28 -32 under 35 U.S.C. 102 has been withdrawn as a result of amendments made by the Applicant to Claims 1, 12, 21 and 32.

2. Claims 1 – 4, 8 – 15, 19 – 24, and 28 -32 have been rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,327,686, to Grundmann et al. (hereinafter Grundmann '686) in view of US Patent No. 6,785,627 to Corr (hereinafter Corr '627).

Applicant notes that the burden of establishing obviousness rests on the Examiner. In order to support a prima facie case for obviousness using a particular set of references, the references must exhibit the following attributes:

(a) The prior art references *must* collectively *teach* or suggest *all* of the *claim limitations* in the application;
(b) There must be a reasonable expectation of success in modifying the reference; and
(c) The references must suggest or provide some motivation to modify and / or combine the reference teachings.

Here, the claimed invention is a method and apparatus for characterizing an electronic circuit in an analytical manner. Grundmann '686 describes an analytical method for analyzing a test pattern used for characterizing a critical delay circuit path. In order to sustain a 103 rejection using the combination of Grundmann '686 and Corr '627, the combination of these two references must teach all limitations of the claimed method and apparatus.

Turning first to Grundmann '686, this reference teaches only a method for analyzing a speed critical path. Applicants note that Grundmann '686 specifies that a speed critical path (Column 4; Lines 11 – 16) occurs where a circuit path would have an incorrect logic state at the end of a clock period (see also Column 8; Lines 25 – 27). This is entirely different than a race condition, which is commonly defined as a difference in an arrival of two signals at different portions of a circuit with respect to each other. For example, a clock signal may arrive at two different latches at two distinct times (see specification Page 7 Lines 20 – 25). This definition of a race condition is commensurate with the vernacular of the art and differs from the speed critical path that considers only the arrival of one signal relative to a clock signal. Hence, Grundmann '686 fails to disclose the limitation of a "race event".

Grundmann '686 also fails to teach the use of an analytical method for a noise event, a coupling event and a dynamic hazard. In fact these are not even mentioned in the teachings of Grundmann '686. Corr '627 does describe noise conditions that occur in a circuit, but only from a test standpoint. Corr '627 does not describe analysis of test vectors or any other form of analysis. Again, Corr '627 only describes a test system that tests a circuit. Corr '627 does not consider analysis of the circuit based on design information. Because Grundmann '686 and Corr '627 fail to disclose even a single limitation of the claimed method and apparatus, the prima facia case for obviousness must fail.

A prima facie case of obviousness further requires that there be found some motivation to modify and/or combine the reference teachings. This motivation can come from the references themselves. Here, no such motivation is found in either reference. As an alternative to finding motivation in the references

themselves, the Office Action must put forth a convincing line of reasoning as to why the artisan would have been motivated by the reference teachings to make the modification or combine the reference teachings. Here, the Office Action has not provided any rationale that would support this alternative motivation requirement. The Office Action has merely stated that "it would have been obvious" to identify a noise event because Corr '627 teaches that "noise [has] an increased effect on internal path delays". This statement, standing alone, is insufficient to establish a convincing line of reasoning. Even if noise were to have such an effect on internal path delays, this is not a motivation to modify the teachings of Grundmann '686 because Grundmann '686 fails to teach any soft fault analysis and Corr '627 does not even concern itself with analytical methods. Accordingly, the Office Action has failed to establish a prima facie case of obviousness. Accordingly, Applicant kindly requests that the rejection of Claims 1 – 4, 8 – 15, 19 – 24, and 28 -32 under 35 USC 103 be withdrawn.

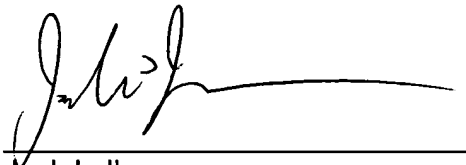
Applicant also notes that in order to sustain a rejection under 35 USC 103, a reference must be from analogous art or the reference teachings must be reasonably pertinent to the problem Applicant intended to solve. Here, Corr '627 is from a testing art – i.e. Corr '627 teaches a testing method and apparatus. The claimed method and apparatus reads upon a method to verify an analytical method. Hence, Corr '627 is from non-analogous art and can not be used in combination with Grundmann '686. Applicant also notes that testing a circuit for noise has nothing to do with verifying an analytical analysis method. Such reference teachings are simply not pertinent to the problem solved by Applicant.

3. Applicant thanks the Examiner for finding allowable subject matter in Claims 5, 7, 16, 18, 25 and 27. The Examiner has suggested that these claims would be allowable if rewritten in an independent form. Applicant notes that

these claims are dependant on Claims 1, 8, 19 and 28, which were previously amended and which are no longer anticipated by Grundmann '686 in their amended form. As a result, Applicant respectfully requests that Claims 5, 7, 16, 18, 25 and 27 be further considered as allowable in their current form.

4. Based on the foregoing, Applicant considers the present method and all claimed embodiments thereof to be distinguished from the art of record. Accordingly, Applicant respectfully solicits the Examiner's withdrawal of the rejections raised in the above referenced Office Action, such that a Notice of Allowance is forwarded to Applicant, and the present application is therefore allowed to issue as a United States patent.

Respectfully submitted,



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